What is claimed is:

1. A surgical thermally-mediated therapy for treating tissue comprising causing a controlled vapor-to-liquid phase state change of a selected media at a targeted tissue site thereby applying thermal energy substantially equal to the heat of vaporization of the media to said tissue site.

2. A surgical thermally-mediated therapy as in claim 1 wherein the heat of vaporization is in excess of about 500 calories per gram of the selected media.

3. A surgical thermally-mediated therapy as in claim 1 wherein the vapor-to-liquid phase state change is created distal of the working surface of an instrument as the selected media is ejected from at least one port in the working surface.

4. A surgical thermally-mediated therapy as in claim 3 wherein the vapor-to-liquid phase state change is created within a body lumen after pressurized ejection of the media from the at least one port.

5. A surgical thermally-mediated therapy as in claim 3 wherein the vapor-to-liquid phase state change is created at a selected depth in soft tissue after pressurized ejection of the media from the at least one port.

6. A surgical thermally-mediated therapy as in claim 3 wherein the vapor-to-liquid phase state change is created about a flexible working surface deployed in the interior of a body cavity or lumen.

7. A surgical thermally-mediated therapy as in claim 1 further comprising the step of controlling a parameter of the causing step selected from the class of parameters consisting of controlling the temperature of the vapor-to-liquid phase state change in the selected media, controlling the pressure of the media ejected from the working surface, controlling the volume of the media being ejected from the working surface, and controlling the rate of delivery of the media volume being ejected from the working surface.

8. A surgical thermotherapy device comprising an instrument having a working end with an interior region in fluid communication with a liquid media source, energy delivery means for causing a liquid-to-vapor phase state change in the media within said interior region and at least one outflow port in a working surface for causing the vapor phase media to interact with a targeted body structure.

9. The device of claim 8 wherein the working surface comprises a portion of a distal end of an endoluminal catheter.

10. The system of claim 8 wherein the working surface comprises portions of the exterior of a thin film structure.

11. The system of claim 10 wherein the working surface comprises portion of the exterior of an expandable structure.

12. The system of claim 10 wherein the working surface comprises portions of the exterior of an inflatable structure.

13. The system of claim 10 wherein the working surface carries a plurality of flow channels with openings therein for directing flows of vapor phase media therefrom to interact with the targeted body structure.

14. The system of claim 10 wherein the working surface carries a flexible surface electrode proximate the at least one outflow port in the working surface.

15. The system of claim 10 wherein the thin film structure is of a releasable bioabsorbable polymer.

16. The system of claim 8 wherein the working surface carries radiopaque markings for cooperating with an imaging system.

17. The system of claim 8 further including a releasable heat shrinkable polymer clip.

18. A surgical thermally-mediated therapy for treating tissue comprising converting a conductive liquid media to a transient conductive vapor media having a heat of vaporization of about 100° C., injecting the transient vapor media into body structure and applying electrical energy to the conductive vapor media before its condensation back into a liquid media thereby applying energy to the body structure proximate surfaces of the vapor media.

19. A surgical therapy as in claim 18 wherein the body structure comprises a body lumen or cavity.

20. A surgical therapy as in claim 18 wherein the body structure comprises soft tissue.